

Fresno Area Mid-Air Collision Avoidance Program (MACA)

**144th Fighter Wing, Fresno,
CA**



Mid-Air Collision Avoidance

This briefing contains material that can change at any time and is strictly for informational purposes only.

Please direct question, comments or requests to:

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Website Link:
<http://www.fresno.ang.af.mil>
(MACA)



MACA Introduction

The goal of the Fresno Area MACA program is to promote the safest flying environment possible by educating the public about Fresno based military aircraft and their mission. Together we can enjoy the airspace over California safely.

Sharing the Skies Safely over California:

The 144th Fighter Wing:

Our mission at Fresno (KFAT) is to provide Air Sovereignty over U.S. airspace, and to train for combat operations in the F-16. Our primary training areas are within the R2508 Complex in Eastern California, and the Warning Areas off the California Coast (W283/285, W532, W260, W291). Military Operations Areas (MOAs) within the R2508 Complex that are most heavily used are the Owens, Saline, Panamint, and Isabella MOAs.

The Strike Fighter Wing, Pacific, Lemoore:

The Lemoore Naval Air Station based F-18s share the same primary training areas as the 144th Fighter Wing. NAS Lemoore (KNLC) is located approximately 30 miles south of the Fresno Air Terminal (KFAT).

The 3rd Marine Aircraft Wing, San Diego:

The Marine Corps Reserve F-18s from Miramar MCAS routinely visit Fresno on the weekends. These F-18s normally fly the same departure and recovery patterns flown by the Fresno based 144th FW F-16s.

Collision Avoidance Tips

1. Plan Ahead

- A. Be aware of the type airspace in which you plan to operate. Are you planning your route through or near a MOA? The R2508 Complex is normally busy with fighter traffic daily from 0800 to 1800 Monday through Friday. Occasionally the complex is busy with fighter activity in the evening and late night hours as well. We fly at altitudes ranging from 500' AGL to FL 500 at speeds exceeding 500 knots within the R2508 Military Training Complex.
- B. Check the aeronautical charts, Aeronautical Information Manual (AIM), and NOTAMS for your route of flight.
- 2. Use air traffic control advisories – if you plan to fly near one of our MOAs, contact Oakland or Los Angeles Center for advisories. If near FAT, contact Fresno approach for advisories.
- 4. If the MOA's are active – The safest action course of action is to go around the MOA.



Special Use Airspace R2508 Military Training Complex

Fresno based F-16s and Lemoore based F-18s routinely operate in the R2508 Special Use Airspace. Depending on the type of training mission, the numbers of aircraft operating within the complex may vary from a single fighter to greater than 20 or 30 at the same time.

The R2508 Complex consists of Military Operating Areas (MOAs), Military Training Routes (MTRs), Restricted airspace, and Air Refueling Tracks (AARs).

While VFR aircraft can legally transit MOAs and MTRs, it should be done with extreme caution since military jets operating in these areas will not be looking for you, will be maneuvering aggressively (“dog fighting”) and could be generating extremely high closure rates on your aircraft.

An FAA facility or Flight Service Station (FSS), as well as Joshua Approach, Oakland Center and Los Angeles Center can provide you with information regarding the activity on these routes and airspace. Frequencies and altitudes for these areas are found on low altitude IFR charts as well as your Sectional Chart.

Six F-16s over Owens Lake in the R2508 Complex



PHOTO BY TED CARLSON COPYRIGHT

Special Use Airspace Warning Areas

Fresno based F-16s and Lemoore based F-18s also routinely operate in the Warning Areas off the coast of California. There are numerous Warning Areas along the entire coast, however the Fresno Air National Guard primarily uses W532, W283, and W285. These areas cover the offshore areas between Santa Barbara and the Bay Area.

Again, while VFR aircraft can legally transit Warning Areas, it should be done with extreme caution! The fighter activity within the Warning Areas commonly include supersonic speeds at all altitudes.

Oakland Center or Los Angeles Center can provide you with information regarding the activity within these Warning Areas.



F-16s over the Ocean in W283



Fresno F16 Departure Paths

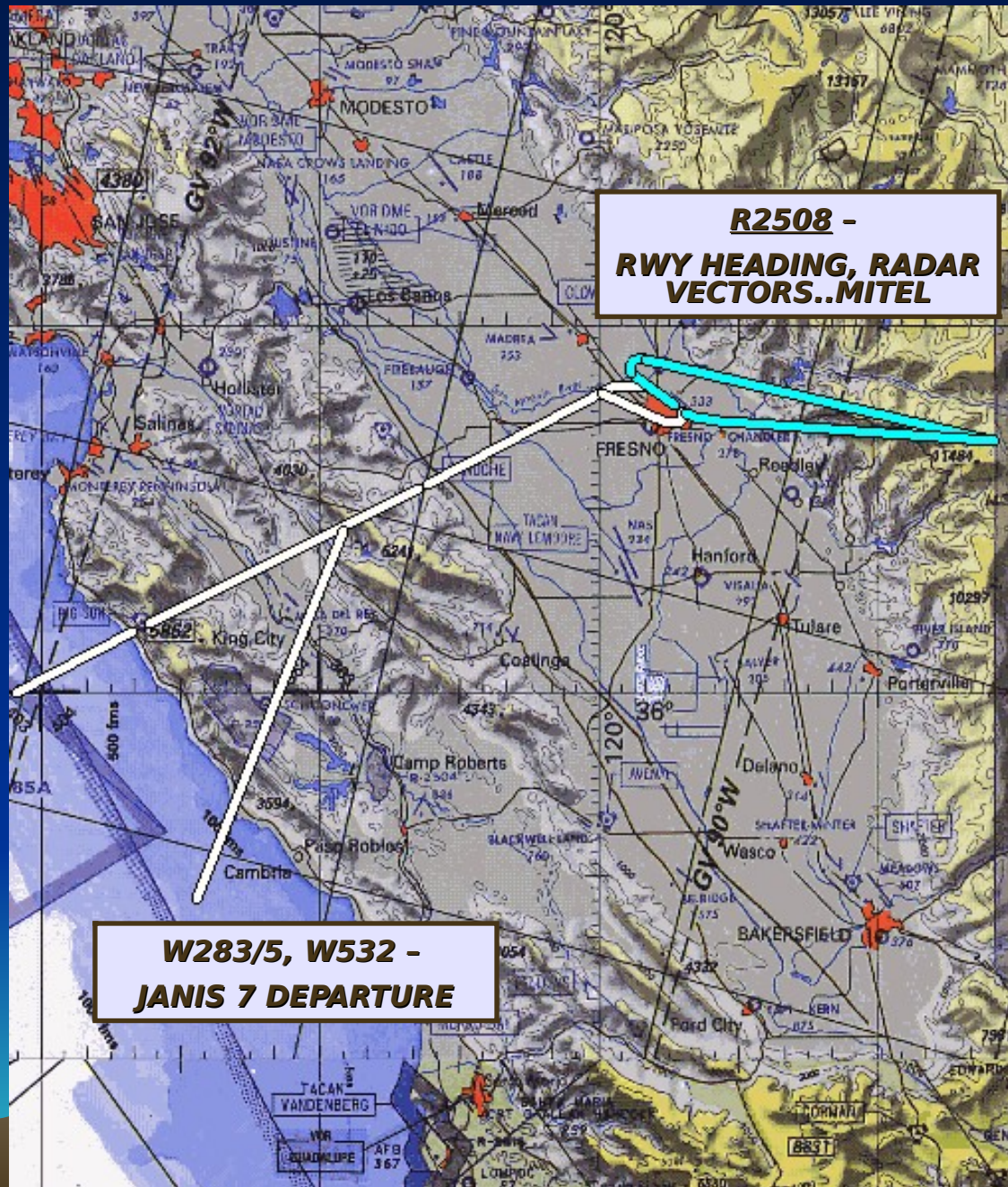
Eastbound to R2508:

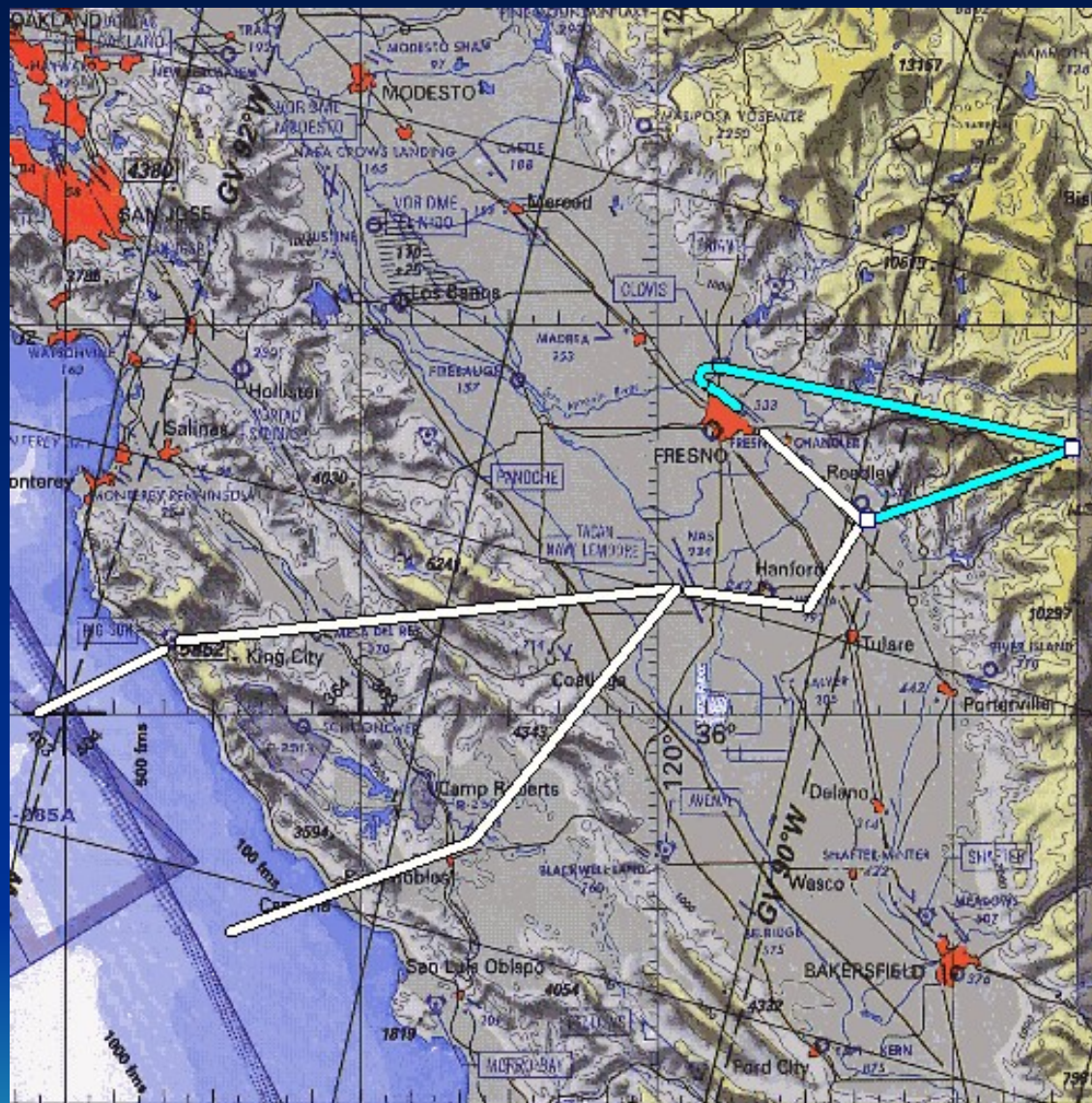
On Runways 29: Climb on runway heading usually until past the San Joaquin River, then a right turn towards Mitel (CZQ VORTAC 086 radial for 60 miles).

On Runway 11L, fly runway heading until cleared direct Mitel.

Westbound to the coast:

Janis 7 Standard Instrument Departure to either Kight for W283/5, or Hondo for W532. Normally





Fresno F16 Arrival Paths

From R2508:

If IFR, then proceed from Mitel, to Grifn, Hilan, FAT.

If VFR, normally from Mitel to just north of the town of Sanger, the direct to the field.

From the Warning Areas

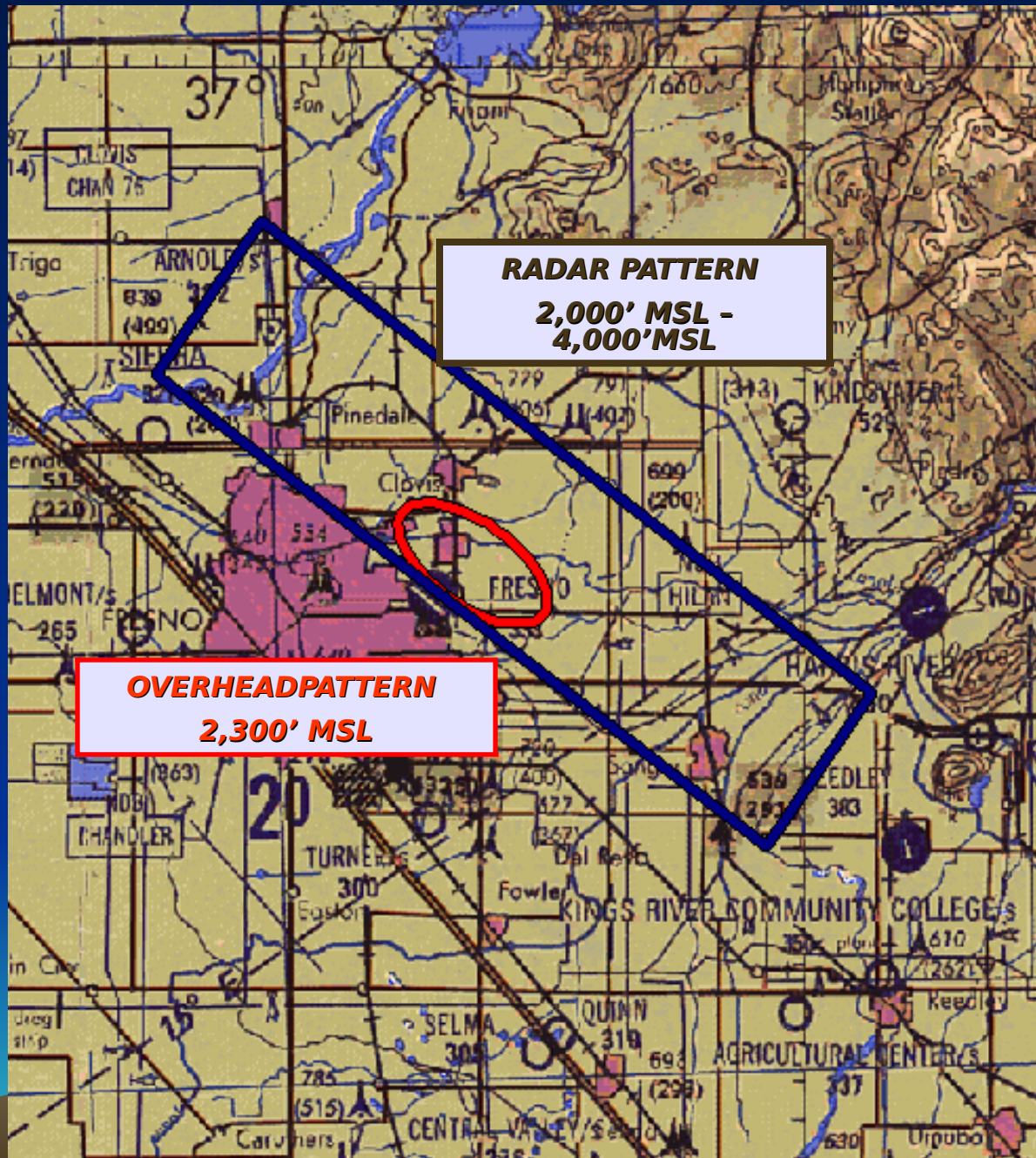
Towards Lemoore NAS, then if IFR proceed toward Bumpi, Grifn, Hilan, FAT.

If VFR, then direct Hilan then direct to the field.

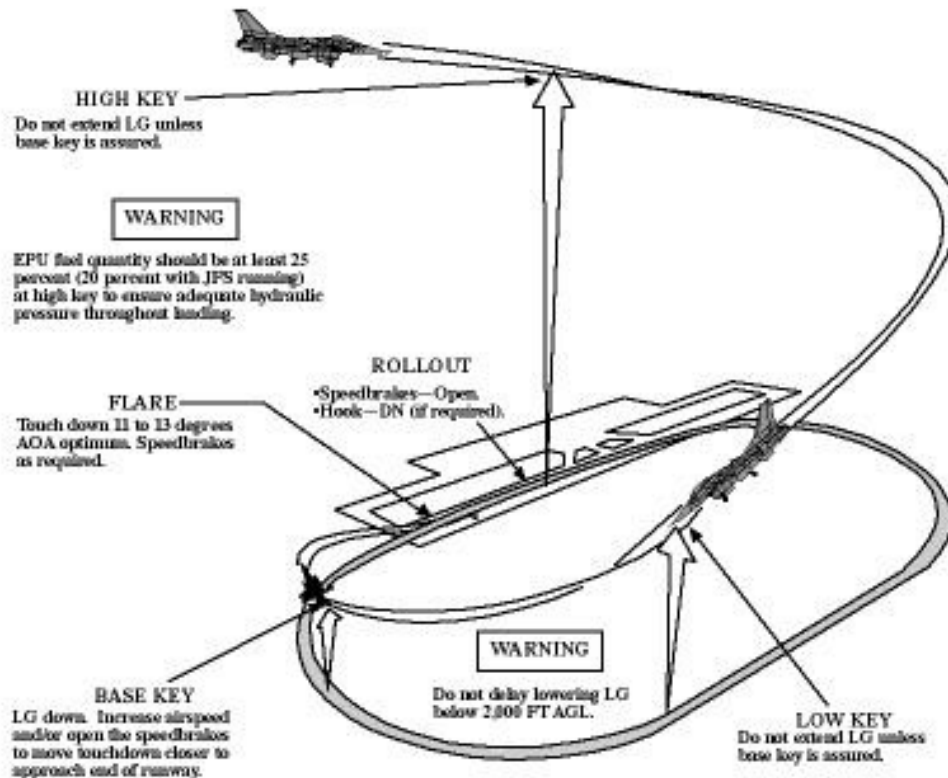
Fresno F16 Traffic Pattern

The “overhead” is where the F-16s approach the runway at 2,300 MSL about 5 miles from the approach end, then while over the runway, they “break” to the north and fly a 360 degree type traffic pattern vs. the standard rectangular civilian traffic pattern.

The “radar” pattern is what we call it when we’re being vectored by Fresno TRACON for multiple instrument approaches.



Overhead Flame-Out Pattern



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Fresno F16 SFO Pattern

The *Overhead* SFO or “simulated flameout pattern” looks the same as the Overhead Pattern from a God’s eye view, but the pattern commences between 7,000 and 10,000 AGL.

The *Straight-In* SFO is simply a straight-in that commences at about 10 miles from the approach end of the runway between 7000 – 10000 AGL.

These patterns normally terminate with a low approach, a closed pull-up to the Overhead Downwind position (2300 MSL), then proceeding normally to a full

Formations

The formations we fly that allow you to easily spot us, are either what we call “fingertip” or “route” formation. “Fingertip” formation is where there are just three feet of lateral separation between the wingtips of adjacent F-16s. “Route” formation is where the wingmen can loosen up the formation to 500 feet of lateral separation between aircraft.

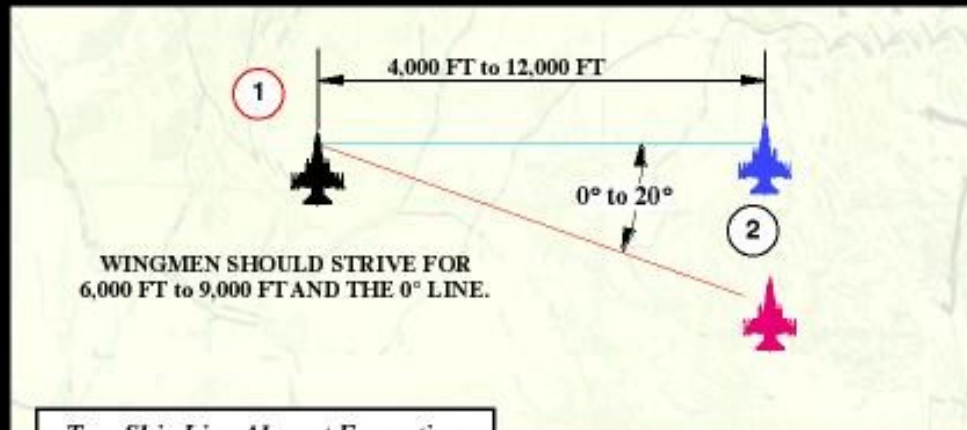
However, there are formations (tactical formations) that make it difficult for you to easily spot us. These are what we normally fly when we’re outside of about five miles of the airfield. These are the formations we fly when training for combat.

The following slides show you these “tactical formations”.

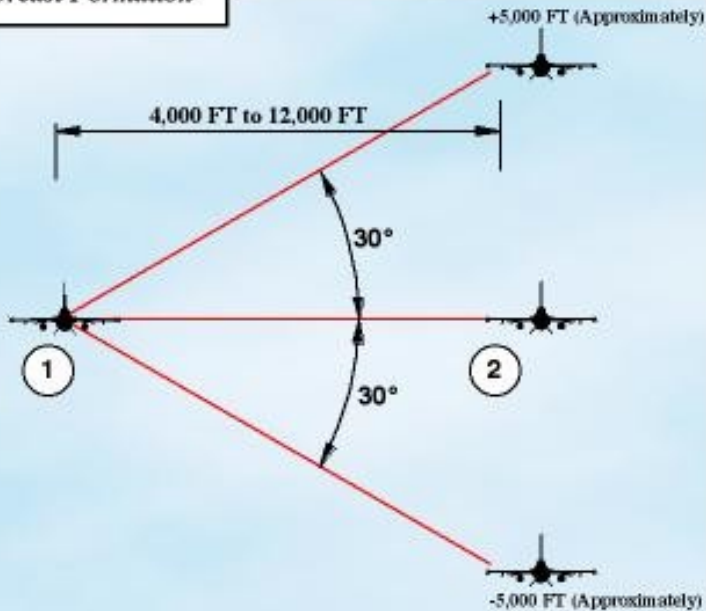
The bottom line is, if you see one, keep your head on a swivel because there’s probably a few more nearby!



Tactical Formation

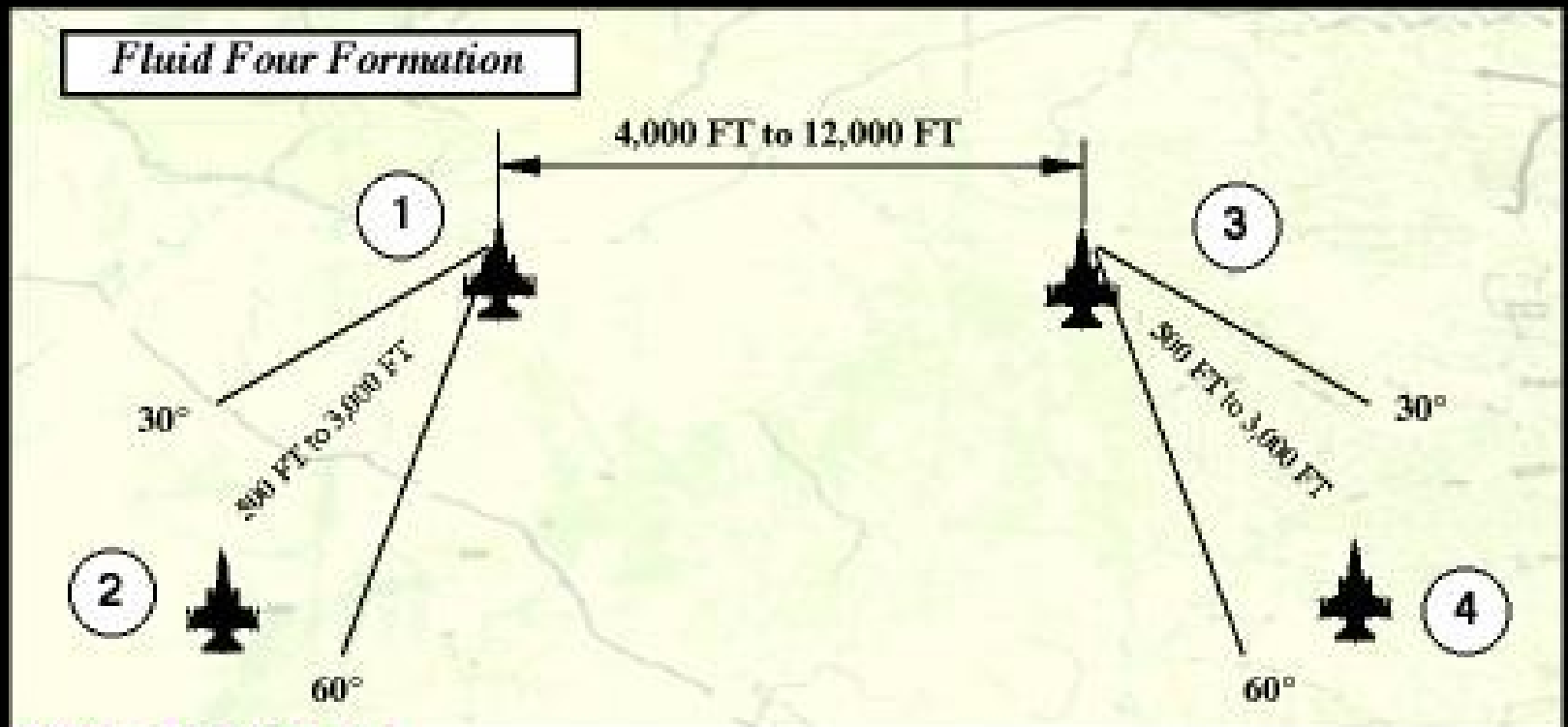


Two-Ship Line Abreast Formation



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Fluid Four



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Air Force Fighter Lingo

Initial: A position between 3 to 5 miles on the extended centerline of the approach end of the active runway

Break: Position at which we start our 360 degree turn over the runway

Downwind: Same as civilian term.

Perch: Point at which we start our descending constant 180 degree turn from downwind to final (we don't square the corners as in a civilian traffic pattern).

Closed: Term for pulling up after a low approach to the downwind position.

SFO: Simulated Flameout Pattern

High Key: Same as a normal Break point, but up between 7000 - 10,000 AGL.

Low Key: A downwind position between 3000 - 5000 AGL.

Base Key: A perch position above 2000 AGL



Valuable Resources

The R2508 Complex has a terrific web site at:

<http://r2508.edwards.af.mil/>

Other very informative sites include:

Lemoore Naval Air Station: <http://www.lemoore.navy.mil/>

Edwards AFB Flight Safety:

http://www.edwards.af.mil/psafety/sef_main.html

Travis AFB MACA:

<http://public.travis.amc.af.mil/public/maca/maca.htm>

Interagency Airspace Coordination:

<http://www.fs.fed.us/r6/fire/aviation/airspace/web/index.html>

NORAD: <http://www.norad.mil/>

